

**In the claims:**

Please amend the claims as follows:

Please cancel claim 1.

Claim 2 (currently amended): An atmospheric pressure comprising:

an aluminum process chamber having ~~an exterior surface~~  
opposing sides defining an entrance and an exit and polished  
interior ~~surfaces~~ walls;

a plenum provided adjacent the opposing sides of the process  
chamber for receiving a flow of inert gas such as Argon ;

aluminum rails provided on interior walls of the process chamber,  
for slideably transporting one or more workpieces from the  
entrance of the process chamber to the exit for continuous  
processing.

~~one or more~~ a plurality of elongated heating elements,  
extending through apertures in the process chamber ~~to the  
exterior surface into each plenum~~, said heating elements arranged  
in a planar array with respect to the workpiece, each heating  
element comprising an aluminum chromium iron alloy resistive  
wire commonly known as Kanthal, resistive wires protected by  
enclosed in a respective alumina ceramic tubing sleeve such that  
the workpiece is protected from contamination by the heating

elements at high temperatures and the heating elements are protected from contamination by the workpiece ; and ~~said resistive wires extending longitudinally through the ceramic tubing such that the wires freely expand and contract in response to temperature changes~~

cooling channels disposed in the walls ~~exterior surface of the process chamber. and,~~

~~aluminum rails provided on interior surfaces of the process chamber, said rails positioned to slideably transport one or more workpieces from a receiving end of the process chamber to an exit end for continuous processing.~~

Please cancel claims 3-15.

Please add the following new claims

16. (Newly presented) An atmospheric pressure furnace as in claim 2 wherein the heating elements further comprise a surface layer of aluminum oxide on the resistive wires that is compatible with the alumina ceramic sleeve, such that heating element service temperatures up to 1400 degrees C are maintained without contamination of the workpiece or deterioration of the heating elements.

17. (Newly presented) An atmospheric pressure furnace as in claim 2 further comprising first and second planar arrays of heating elements spaced about three eighths inch (0.375) apart, the arrays disposed above and beneath the workpiece such that the workpiece is

surrounded by a substantially uniform heating surface approximating an isothermal chamber.

18. (Newly presented) An atmospheric pressure furnace as in claim 2 comprising a  $\Delta T$  (actual heating element temperature minus workpiece temperature) that is in a range of 100° C or less.

19. (Newly presented) A heating element for preventing contamination of a workpiece in a furnace including aluminum walls defining a reflective process chamber comprising:

a first resistive wire having a first diameter comprising an alloy of aluminum chromium and iron commonly known as Kanthal encased in a supporting aluminum ceramic sleeve located within the process chamber and supported at a terminal end in a wall of the furnace ;

a Nichrome wire welded to the first resistive wire having a second diameter larger than the first diameter for providing a transition zone to reduce heating from the first wire;

a nickel wire welded to the Nichrome for further reducing heat to the supporting terminal.